

A survey of nursing documentation, terminologies and standards in European countries

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Abstract

A survey was carried out to describe the current state of art in the use of nursing documentation, terminologies, standards and education. Key informants in European countries were targeted by the Association for Common European Nursing Diagnoses, Interventions and Outcomes (ACENDIO). Replies were received from key informants in 20 European countries. Results show that the nursing process was most often used to structure nursing documentation. Many standardized nursing terminologies were used in Europe with NANDA, NIC, NOC and ICF most frequently used. In 70% of the countries minimum requirements were available for electronic health records (EHR), but nursing not addressed specifically. Standards in use for nursing terminologies and information systems were lacking. The results should be a major concern to the nursing community in Europe. As a European platform, ACENDIO can play a role in enhancing standardization activities, and should develop its role accordingly.

Introduction

The use of structures for nursing documentation varies between and even within different European countries. The standardization of nursing language has been in process already for many years. Evidence is available on the use of standardized structures and terminologies for nursing recording within some European countries ¹⁻⁴. The nursing process model presented by the World Health Organization (WHO) is the most common way to structure nursing documentation in health records for the decision making process ⁵. According to the model the nursing process can be divided into four up to six phases. Assessment, planning, intervention and evaluation are the most commonly used phases. Nursing diagnosis has been added as an independent phase following assessment in many countries and the sixth phase is expected outcomes ^{5,6}. Many countries have followed the development work of the International Council of Nursing (ICN) and their extensive product the International Classification of Nursing Interventions (ICNP)⁷. The NANDA classification has also been translated into ten European languages, Dutch, English (British), French, German, Icelandic, Italian, Norwegian, Portuguese, Spanish, and Swedish⁸.

Since 1995 the Association for Common European Nursing Diagnoses, Interventions and Outcomes (ACENDIO) offers a platform for discussion on terminology activities in the European countries (www.acendio.net). Standardization of nursing language has been the leading topic among members. The objectives of ACENDIO have recently been changed and are now:

- To promote the inclusion of nursing diagnoses, interventions and outcomes into classifications, information systems, and databases relevant to health and health care throughout Europe
- To promote a common European nursing minimum data set
- To initiate, promote, and facilitate the identification, validation, standardization, translation and use of the terms to represent nursing concepts expressed as nursing diagnoses, interventions and outcomes.
- To promote research on nursing diagnoses, interventions and outcomes in order to increase the body of nursing knowledge.

The list of activities is very demanding and, thus, the board of ACENDIO decided to conduct a survey to acquire more in depth information about the state of standardization and width of support needed in standardization work within nursing in Europe. The results are presented in this paper.

Aim and Purpose

The survey aimed at answering the following questions:

- What structures are used in nursing documentation in health records in Europe?
- What nursing terminologies are used and have been translated into European languages and are they validated for cultural use?
- What kind of nursing language standardization work exists and is used in Europe?
- What is the status of health informatics education in European countries?

Materials and Methods

The instrument for this survey was designed based on literature, and expertise in the ACENDIO board. The questionnaire contained 32 items including background information, use of structures and terminologies in nursing documentation, national initiatives and activities, means of organizing standardization activities in nursing, methods of support from national stakeholders and health informatics education. Key informants likely to have knowledge or access to information on the status in their country were searched for in each of the 53 European countries. A sample of 30 key informants (one in each European country) was identified and invited to answer the questionnaire in November 2010, which was administered as a web survey. Only eighth informants responded. To increase the number of responses from European countries participants at the ACENDIO conference in Madeira in March 2011 were also invited to respond to the questionnaire. More than one response was received from three countries, Portugal, Sweden and Switzerland. A big discrepancy was between three answers in the Portuguese responses. Two of the responses were not included, one was evaluated to reflect only one hospital and in the other many questions were not answered and therefore not included. Good congruence was between the two informants from Sweden but the more favorable responses to the status in Sweden were used. Both responses from Switzerland were used as one reflected the French speaking region and the other the German speaking. Descriptive statistics were used to analyze the data.

Results

Demographics and Background of Respondents

Replies were received from 20 countries in Europe, namely Andorra, Austria, Belgium, Bulgaria, Denmark, England, Estonia, Finland, Germany, Iceland, Ireland, Italy, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland –German speaking, Switzerland – French speaking and Wales. Switzerland will be presented as two countries as the French and German speaking regions differ considerably. Most respondents came from academia, research or nursing education (n=9), were in nursing management, consultants or project leaders (n=7) or from professional organizations (n=2). All but three of the respondents said they were involved in development, translations or implementations related to standardization or terminologies, professional or governmental organizations, were members of advisory and/or steering groups/boards or workgroups, working on research and evaluations related to informatics issues.

Structures Used in Nursing Documentation in Health Records in Europe

Nursing data in health records were completely (n=6) or to some degree (n=13) structured according to the nursing process in 20 countries. Standardized nursing diagnoses were used completely in three countries (Andorra, Austria, German speaking Switzerland), 10 countries said they were used to some degree and Belgium, Denmark, Estonia, Germany, and Wales said they did not use any standardized nursing diagnoses. Standardized nursing interventions were used completely (n=4) or to some degree (n=8) and not at all in six countries. Twelve countries said they did not use standardized nursing outcomes and seven countries used them completely (Andorra, Austria, German speaking Switzerland) or to some degree (Finland, Portugal, Spain and French speaking Switzerland). Four countries (England, Finland, Switzerland –German speaking, Sweden) estimated 81-100% of nursing being documented electronically and four (Andorra, Austria/Germany, Norway, Spain) estimated 61-80% electronic documentation. One country, Wales, reported no electronic nursing documentation. Integrated nursing information systems were available in 13 of the 20 European countries and stand alone systems for nursing were used in three countries. In

hospitals nursing was documented completely in three countries (Austria, Spain, Sweden), primary care in seven countries (Austria, Bulgaria, Denmark, Iceland, Spain, Sweden, Switzerland- German speaking) and to some degree in nursing homes in nine countries.

Terminologies for Nursing Documentation in Europe

Standardized nursing terminologies were used to some degree in 16 countries. NANDA-I (see list of acronyms for terminologies below table 1) was the most widely mentioned terminology (n=11), then NIC (n=9), with NOC (n=6) and ICF (n=5) closely following. Other terminologies being used were ICNP, OMAHA, VIPS, CCC, SNOMED-CT, LOINC, PNDS and local terminologies. NANDA, NIC, NOC, ICNP and ICF had been translated into many different languages (Table 1). Of the countries that replied, English was the first language in England, Wales and Ireland. Validation of translations had most frequently been done on NANDA, NIC and ICF but only in four, three and three countries respectively and other terminologies were less commonly subject to validation. Professional organizations were most often responsible for the translation process (n=6), followed by authorities (n=4), university institutions (n=4), and private organizations (n=2).

Table 1. Terminologies used, translated and validated in Europe

	ICNP	CCC	Omaha	NANDA-I	NIC	NOC	PNDS	LOINC	SNOMED-CT	ICF	VIPS	Other/Local
Andorra			U	U	U	U						
Austria/ Germany				UT	T	T						
Belgium				UTV								U
Bulgaria												U
Denmark									TV		U	
*England			V	V	V	V			V			
Estonia				T								
Finland		UTV					UTV	UT	T	T		
Germany	UT			UT	UT	UT				UT		UT
Iceland				UTV	UTV	T		UT		TV		
*Ireland			U									V
Italy	T			UT	T	T				UTV		U
Norway	T	T		UT	UT	T				T	T	
Portugal	UTV			UT	UT	UT			UT	UT		U
Slovenia	T			UT								T
Spain				UTV	UT	UT						
Sweden	T			T					T	UT	UTV	
Switzerland, Fr.	UT			UT	UT	UT				UTV		
Switzerland, Ger.	T			UTV	UT	UT				T		U
*Wales												U

U = terminologies in use; T = translations of terminologies; V = validations of terminologies.

* English is the spoken and written first language

CCC: Clinical Care Classification ; ICD-10: International Classification of Diseases, 10th edition; ICF: International Classification of Functions; ICNP: International Classification for Nursing Practice; ICPC: International Classification of Primary Care; LOINC: Logical Observation Identifiers Names and Codes; NANDA-I: NANDA

International; NIC: Nursing Interventions Classification; NOC: Nursing Outcomes Classification; OMAHA: Omaha System; PND: Perioperative Nursing Data Set; RAI: Resident Assessment Instrument; SNOMED-CT: Systematized Nomenclature of Medicine-Clinical Terms; VIPS Vålbefinnande, Integritet, Prevention, Säkerhet (English: Well-being, Integrity, Prevention, Security).

Standards for Nursing Documentation

Fourteen countries had minimum requirements for electronic health care information systems but nursing was not addressed specifically in nine of those. Nursing data were reported to be stored to some degree at least in 12 of the countries and patient specific nursing data could be retrieved to some degree in 15 countries. Standardization work in relation to nursing terminologies and health care record systems was taking place in 13 and 12 countries respectively. When asked about use of standards in systems, four countries were using ISO 18104, namely Belgium, Portugal, Spain, and Sweden. The standard most often mentioned as being used was HL7.

Health Informatics Education

Health informatics programs at a bachelor level were available in 14 countries (yes=8; to some degree=6), in 16 countries (yes=13; to some degree=3) at a master's level and in nine countries at a doctoral level (yes=4; to some degree=5).

Discussion

The results show that the nursing process was most commonly used in European countries to structure nursing documentation. The use of standardized nursing terminologies is still lacking in many European countries and not yet the standard way of practice by nurses. Nevertheless, a majority (68%) of the countries that replied were using standardized nursing terminologies, most often nursing diagnoses followed by nursing interventions. The terminologies in use in Europe vary greatly, which makes comparisons between countries difficult, but the NNN terminologies (NANDA-I, NIC and NOC) are the most frequently used. Most of the nursing terminologies were developed in English language and also in non-European cultures. Translational and cultural validations of these terminologies are, therefore, needed in many countries. The validation process requires manpower and is time consuming. Professional organizations and health authorities in many countries have been active in the validation processes but more work is needed by nurses in Europe in this regard.

Mapping between nursing terminologies would make comparison between countries easier. Results show that ICNP and SNOMED-CT, which can both be considered reference terminologies, are not widely used in Europe. Projects and discussions are needed among nurses in Europe regarding use of reference terminologies, such as ICNP or SNOMED-CT, which could serve as a common platform for uniform nursing data.

Use of electronic documentation in nursing is still not in general use in Europe and only in three countries is nursing documented completely in hospitals. General use of standardized nursing terminologies in Europe is still lacking, which makes access to nursing data an obstacle. In less than half of the institutions in the countries that replied, nursing data were not stored and could, therefore, not be retrieved. These results should be a major concern to the nursing community in Europe. This also relates to the lack of use of standards in use of nursing terminologies and information systems.

There are 53 countries in Europe and the national status in relation to, for example, nursing, nursing education, health care systems, living standards (e.g. computerization), varies considerably between them. The board of ACENDIO had performed a study in 2008 among its members. One of the limitations to that study was that the respondents did not always have the knowledge or overview of the situation in their country in terms of nursing terminology and standardization work. The responses did therefore not always give an accurate picture of the situation in the country. In this study the goal was to identify key persons likely to be experts and therefore be able to cover all developments related to the goals of the study or have access to such information in their country and ask them to participate. Key informants could only be identified in 30 countries and only eighth of those initially replied. To increase the response rate participants at the ACENDIO conference in 2011 were invited to answer the questionnaire. Twelve additional responses were collected by that. The sample in this study is therefore a limitation.

Conclusion

Standardization activities in Europe as well as in other parts of the world are needed to support the development of useful repositories for nursing data to improve the quality of health care. One of the objectives of ACENDIO for this biennium is to set up an European Observatory of Nursing Standards (EONS) focusing on common European nursing languages. A step towards that is to identify and liaise with key nursing individuals across Europe regarding nursing language standardization work.

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